

WHAT IS CLAIMED IS:

1. A communication system comprising:
an active input circuit having:
 - 5 an active input memory circuit that has a plurality of addresses, the plurality of addresses having an associated plurality of keys and forwarding information, the active input memory circuit receiving a plurality of cells, extracting key information from each cell, and comparing the key information from each cell with the keys, the
10 active input memory circuit outputting forwarding information for a cell when the key information of the cell matches a key; and
an active input routing circuit that is connected to the active input memory circuit, the active input routing circuit receiving the plurality of cells, and forwarding information from the active input
15 memory circuit for a number of the cells, the active input routing circuit transmitting an input cell onto a bus in response to forwarding information for the input cell.
2. The communication system of claim 1 wherein:
20 the plurality of addresses have an associated plurality of enabled/disabled flags;
the active input memory circuit outputs forwarding information when the key information of the cell matches a key and an associated enable/disable flag is enabled.
- 25 3. The communication system of claim 2 and further comprising a command processing circuit connected to the input active memory, the command processing circuit receiving an enable all command and setting the enabled/disabled flag to enabled for each

address unless the address has a key that matches a predetermined pattern.

4. The communication system of claim 3 wherein:
5 the plurality of addresses have an associated plurality of control/data flags; and
the command processing circuit receives a disable data command and sets the enabled/disabled flag to disabled for each address that has a control/data flag set to data.

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5. The communication system of claim 4 wherein the command processing circuit receives an enable control command and sets the enabled/disabled flag to enabled for each address that has control/data flag set to control.

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6. The communication system of claim 5 wherein the command processing circuit is combinational logic.

7. The communication system of claim 2 and further
20 comprising:
a standby input circuit connected to the active input circuit, the standby input circuit having:

a standby input memory circuit that has a plurality of addresses that have an associated plurality of keys, forwarding
25 information, and enabled/disabled flags, the standby input memory circuit receiving the plurality of cells, extracting key information from each cell, and comparing the key information from each cell with the keys, the standby input memory circuit outputting forwarding information for a received cell when the key information of the received
30 cell matches a key and an associated enable/disable flag is enabled; and

a standby input routing circuit that is connected to the standby input memory circuit, the standby input routing circuit receiving the cells, and forwarding information for a number of the cells from the standby input memory circuit, the standby input routing circuit
5 transmitting a received input cell onto the bus in response to forwarding information for the received input cell.

8. The communications system of claim 7 wherein the forwarding information associated with the keys in the active input
10 memory circuit and the standby input memory circuit include valid entries unless a key matches a predetermined pattern.

9. The communication system of claim 8 wherein:
the plurality of addresses in the active input memory circuit
15 include a plurality of control/data flags; and
the plurality of addresses in the standby input memory include a plurality of control/data flags.

10. The communication system of claim 9 wherein:
20 the plurality of addresses in the active input memory circuit that have control/data flags that indicate data are enabled; and
the plurality of addresses in the standby input memory circuit that have control/data flags that indicate data are disabled.

25 11. The communication system of claim 10 wherein:
the plurality of addresses in the active input memory circuit that have keys and control/data flags that indicate control are enabled; and
the plurality of addresses in the standby input memory circuit that have keys and control/data flags that indicate control are enabled.

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12. A method of operating a circuit that has a plurality of addresses that have an associated plurality of keys and forwarding information, the method comprising the steps of:

- receiving a plurality of cells;
- 5 extracting key information from each cell;
- comparing the key information from each cell with the keys, and
- outputting forwarding information for an input cell when the key information of the input cell matches a key.

10 13. The method of claim 12 wherein:

the plurality of addresses also have an associated plurality of enabled/disabled flags; and

- the outputting step outputs forwarding information when the key information of the input cell matches a key and an associated
- 15 enable/disable flag is enabled.

14. The method of claim 13 and further comprising the steps of:

- receiving an enable all command; and
- 20 setting the enabled/disabled flags to enabled for each address unless the address has a key that matches a predetermined pattern.

15. The method of claim 14 wherein:

the plurality of addresses include an associated plurality of control/data flags, and further comprising the steps of:

- receiving a disable data command; and
- setting the enabled/disabled flags to disabled for each address that has control/data flag that indicates data.

16. The method of claim 15 and further comprising the steps of:
receiving an enable control command; and
setting the enabled/disabled flags to enabled for each address
5 that has a control/data flag that indicates control.

17. The method of claim 16 wherein the circuit includes a memory circuit and a local control circuit.

10 18. A method of operating a circuit that has a plurality of addresses that have an associated plurality of keys, forwarding information, control/data flags, and enable/disable flags, the method comprising the steps of:
determining whether an enable all command has been received;
15 and
when the enable all command has been received, setting the enabled/disabled flags to enabled for each address unless the address has a key that matches a predetermined pattern.

20 19. A method of operating a circuit connected to first and second local controllers via a bus, the method comprising the steps of:
addressing the first local controller over the bus and writing a plurality of control routes to the first local controller;
addressing the second local controller over the bus and writing a
25 plurality of control routes to the second local controller;
addressing the first local controller over the bus, and writing a plurality of data routes with valid routing information to the first local controller;

addressing the second local controller over the bus, and writing a plurality of data routes with valid routing information to the second local controller;

- 5 addressing the first local controller over the bus and writing an enable all command to the first local controller; and
- addressing the second local controller over the bus and writing an enable control command to the second local controller.

20. A method of operating a circuit connected to first and
- 10 second local controllers via a bus, the method comprising the steps of:
- detecting a failure condition;
- when a failure condition has been detected, outputting a disable data command to the first local controller; and
- outputting an enable all command to the second local controller.

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